FLOODING AND FLOOD-RELATED DAMAGES REPORT

SAN FRANCISQUITO CREEK
SANTA CLARA COUNTY
DECEMBER 21-23, 2012

Santa Clara Valley Water District

SANTA CLARA VALLEY WATER DISTRICT

FLOODING AND FLOOD RELATED DAMAGES REPORT IN SANTA CLARA COUNTY SAN FRANCISQUITO CREEK DECEMBER 21-23, 2012

Prepared by:

Hydrology, Hydraulics and Geomorphology Unit

With Assistance from

Watersheds Field Operations

September 2013

Cover photo taken by Kent Brew upstream of Chaucer Street Bridge on 12/23/2012

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INTRODUCTION

On December 23rd, 2012, a major storm entered Santa Clara County dumping up to 6 inches of rain in Santa Cruz mountains. Flooding damage occurred along San Francisquito Creek at various locations. Mandatory evacuations were ordered in the immediate areas of overflows; residents in nearby neighborhoods were advised to temporarily vacate their homes. Damage was reported to a number of homes, in addition to streets and other public facilities. The extreme flows in the creek, the third highest recorded since such data has been gathered in 1932, also caused significant damage to the levee and creek banks. Appendix A includes detailed observations in the Event Inspection.

The statistical recurrence frequencies of peak flows for the creeks in the Santa Clara County during this storm period varied from less than 2 to 13 years. Throughout the report, reference is made to "10-yaer floods", or "100-year floods." This is a shorthand description of the flood events and does not mean that flooding will occur every 10 years or 100 years, but rather that this frequency of occurrence could be expected statistically on the average over a period of many years. The frequency is also often expressed as a percentage. A 100-year flood is said to be a 1 percent flood-a flood having 1 percent chance of occurring in any year. A 100-year criterion is commonly used for flood protection design.

WEATHER

The major flooding event on December 23, 2012, was the third in a series of atmospheric river storms, or more commonly referred to as ”Pineapple Express” storms. These are large tropical storms originating in the Pacific that are picked up by the jet stream and carried to the west coast. This specific storm began north of Hawaii and made its way toward northern California. The string of storms began on December 21st and finished on the 23rd.

The flooding on San Francisquito Creek occurred due to heavy rains over the aforementioned period. Three storm fronts passed over the San Francisco Bay Area during that period, with most of the flooding caused by the second and third front passing the San Francisco Bay Area on Saturday and Sunday (December 22nd and 23rd respectively). The storm was noted to be slow moving with a high rainfall.

Rainfall and stream flow data for the above storm periods, along with historical data, are contained in Tables 1 and 2.

Figure 1 illustrates the recorded stream flow hydrograph at San Francisquito Creek at Stanford University. It shows how increased rainfall amounts generate increases in stream flow. In addition, the flooding time and flow rate can also be determined. Figure 2 shows the 48-hour storm total in Santa Clara County during the storm.

FLOODING – DECEMBER 23, 2012

At 8pm on Sunday, December 23rd, San Francisquito Creek spilled over the levee between Verbena Drive and Daphne Way, University Ave, and Woodland Ave. That same evening, water was also reported seeping through the levee and resurfacing up the landward side. Nearby residents were advised to temporarily vacate their homes. Damage was reported to a number of homes, with one home reporting significant damage.

Flooding was most severe in two neighborhoods in the City of East Palo Alto:

- The Gardens neighborhood of East Palo Alto.
- The Woodland Avenue area north and south of University Avenue.

Flooding caused evacuations of residents living in the surrounding area and closed northbound lanes of Highway 101. Damage to private property as well as public infrastructure was noted when San Francisquito Creek overtopped its banks, with several homes suffering flood damage. The overspill also washed debris into the Woodland and Gardens neighborhood in the City of East Palo Alto. Figure 3 illustrates the San Francisquito flood inundated area.

DAMAGE ASSESSMENT AND POST-FLOOD SUMMARY

The Santa Clara Valley Water District conducted two event inspections for the flooding event on December 27, 2012 and on December 31, 2012. Photographs from both days are listed with short descriptions in the Appendices A and B.

In February 2013, the California Governor proclaimed a state of emergency to exist within the County of San Mateo (See Appendix C).

The City of Menlo Park estimated that within their jurisdiction, creek bank erosion caused $1.95 to $3.7 million dollars of damage to private property, and $193,000 to $370,000 of damage to public property, which includes debris deposition within the creek. Direct damages to businesses and homes were estimated to be between $285,000 and $820,000 (Appendix E).

After the flood, the City of East Palo Alto indentified fourteen projects in various locations to address damages caused by December 23rd flooding. The City of East Palo Alto assessed these projects, which totaled $2,627,000 (See Appendix E).

The Cities of Menlo Park, East Palo Alto, along with the Santa Clara Valley Water District and Miller Pacific Consultants, assessed damages following the flood event. A summary of notable observations are listed below.

- Two fallen trees near Highway 101 and Woodland Avenue. Fallen trees pose an increased flood risk associated with the potential to block flow and erode earthen flood protection facilities.
- Slope failure about 100 feet south of the Woodland/Scofield Street intersection. Miller Pacific estimated the failure to be roughly twenty feet wide.
- Twenty-five foot creek bank failure about 200 feet south of the Woodland/Scofield Street Intersection opposite 1621 Woodland Avenue.
- Creek bank failure adjacent to 1651 Woodland Avenue that was estimated to be sixty feet long with a near-vertical failure adjacent to the city street, along with a downed tree. A moderate landslide is noted to have occurred opposite of 1699 Woodland Avenue, occurring over a 50 foot segment of the creek bank.
- “Boils” were observed at 1985 East Bayshore Road. Additionally, a tension crack is noted downstream of the bridge, occurring because of scouring and/or undercutting of the channel banks.
- A fallen oak tree is noted at 1985 East Bayshore Road and it is noted that some Rip Rap was displaced at the O’Connor Street Pump Station.

TABLE 1

RAINFALL AMOUNT AND RETURN PERIOD IN SANTA CLARA COUNTY

STATION	6 HOURS		24 HOURS		48 HOURS	
	INCHES *	YEARS**	INCHES *	YEARS**	INCHES *	YEARS**
City of San Jose	0.8	<2	1.04	<2	1.64	<2
Morgan Hill	1.54	3	2.14	<2	2.9	3
Castro Valley	1.64	3	1.92	<2	3.68	<2
Valley Christian	2.68	3	4.2	<2	6	<2
Stevens Creek Reservoir	2.04	3	3.2	<2	4.56	<2
West Yard	0.92	<2	1.08	<2	1.52	<2
Mt Hamilton	1.2	<2	1.76	<2	3.28	<2
Calero Watershed	1.48	<2	2.32	<2	3.2	<2
Curtner Ranch	1.28	4	1.56	<2	2.24	3
Mtn. View Corp. Yard	1.28	10	1.68	3	2.2	3
Evergreen	0.75	<2	0.95	<2	1.47	<2
Biel Ranch	1.44	7	1.88	3	2.64	4
Shanti Ashrama	1.52	3	1.96	3	3.12	2
Coit Ranch	1.56	3	2.2	<2	3.44	<2
Laguna Seca	1.04	<2	1.52	<2	2.12	<2
Sunnyvale Hamilton WTP	1.51	30	2.07	3	2.75	3
Maryknoll	1.24	<2	1.8	<2	2.44	<2
Rinconada WTP	1.48	3	2.32	<2	3.4	3
Guadalupe Watershed	2.24	<2	3.6	<2	5	<2
Vasona Pump Station	1.32	<2	2.04	<2	2.92	<2
Church Ave. Perc. Ponds	1.8	6	2.24	<2	3.08	<2
Uvas Canyon County Park	3.64	10	5.64	3	6.84	<2
Guadalupe Slough	1.24	10	1.44	3	1.8	2
Uvas Reservoir	0.64	<2	1.16	<2	1.72	<2
Alamitos	0.84	<2	1.24	<2	1.64	<2
Johnson Ranch	1.56	2	2.56	<2	3.4	<2

TABLE 1 (continued)

RAINFALL AMOUNT AND RETURN PERIOD IN SANTA CLARA COUNTY

STATION	6 HOURS		24 HOURS		48 HOURS	
	INCHES *	YEARS**	INCHES *	YEARS**	INCHES *	YEARS**
UTC	0.84	<2	1.16	<2	1.88	<2
Banjo Point	2.18	<2	4.14	2	5.41	2
Haskins Ranch	1.16	<2	1.52	<2	2.24	<2
Penitencia WTP	1.04	2	1.24	<2	1.92	2
Cow Ridge	1.28	<2	1.68	<2	2.68	<2
Loma Prieta	2.08	<2	3.48	<2	5.28	<2
Leroy Anderson Dam	1.16	<2	1.76	<2	2.72	<2
Coyote Reservoir	1.7	7	2.26	<2	3.01	<2
Coe Park	1.4	<2	1.88	<2	3.59	<2
Almaden Watershed	1.88	<2	3.28	<2	4.6	<2
Mt Umunhum	2.76	3	4.72	2	6.36	2
Dahl Ranch	1.32	<2	1.6	<2	2.52	<2
Palo Alto	1.47	11	1.71	3	2.11	3

* Total rainfall received over 6, 24 and 48 hour period.

** Return Period (average frequency of occurrence)

TABLE 2

Peak Flow Values for various Streams in Santa Clara County During December 23, 2012

Lower Penitencia Watershed

Stream Gage #	ALERT ID	Location	Peak Flow (cfs)	Return Period (Years)	Historic Peak Date	Historic Peak Flow (cfs)	Record Began
33	1456	Hale Creek at Magdalena Ave	319	13	12/23/1955	567	1945
44	1482	Stevens Ck below Stevens Ck Reservoir	150	2	2/17/1986	5260	1962
32		Permanente at Berry Ave	194	3	3/2/1983	967	1945
USGS11164500	----	San Francisquito Ck at Stanford Univ	5400	13	2/3/1998	7200	1932
USGS11166000	----	Matadero Ck at Palo Alto	928	7	2/2/1998	2560	1953

West Valley Watershed

Stream Gage #	ALERT ID	Location	Peak Flow (cfs)	Return Period (Years)	Historic Peak Date	Historic Peak Flow (cfs)	Record Began
26 A	1477	Calabazas Ck at Wilcox School	2030	6	12/16/2002	3550	1945
24	2050	San Tomas Ck above Williams Rd	1600	3	1/14/1978	2990	1955
25	----	Saratoga Creek at Pruneridge	1290	3	12/23/1955	3760	1943

Guadalupe Creek Watershed

Stream Gage #	ALERT ID	Location	Peak Flow (cfs)	Return Period (Years)	Historic Peak Date	Historic Peak Flow (cfs)	Record Began
73	1485	Canoas Ck at Almaden Expwy	207	1	1/9/1995	1560	1978
23B	1535	Guadalupe R above Almaden Expy	1570	2	1/9/1995	8470	1940
59	1492	Los Gatos Ck at Lark Ave	345	2	3/16/1967	4110	1967
50	1494	Los Gatos Ck at Lincoln Ave	706	2	3/10/1995	4980	1955
USGS111690252003	----	Guadalupe River at Highway 101	3160	1	12/16/2002	6070	2003

TABLE 2 (continue)

Peak Flow Values for various Streams in Santa Clara County During December 23, 2012

Coyote Creek Watershed

Stream Gage #	ALERT ID	Location	Peak Flow (cfs)	Return Period (Years)	Historic Peak Date	Historic Peak Flow (cfs)	Record Began
1	1489	Upper Penitencia Ck. at Piedmont Ave	293	2	4/2/1958	3730	1943
83	1548	Upper Penitencia Ck. at Dorel Ave	435	3	1/9/1995	1280	1988
USGS11169800	----	Coyote Ck nr Gilroy-	5820	3	1/31/1963	10100	1961
USGS11172175	----	Coyote Creek at Hwy 237	1060	1	1/24/2000	2550	1999

Pajaro River Watershed

Stream Gage #	ALERT ID	Location	Peak Flow (cfs)	Return Period (Years)	Historic Peak Date	Historic Peak Flow (cfs)	Record Began
78		Bodfish Ck at Whitehurst Rd	706	6	1/19/1999	1500	2000

FIGURE 1

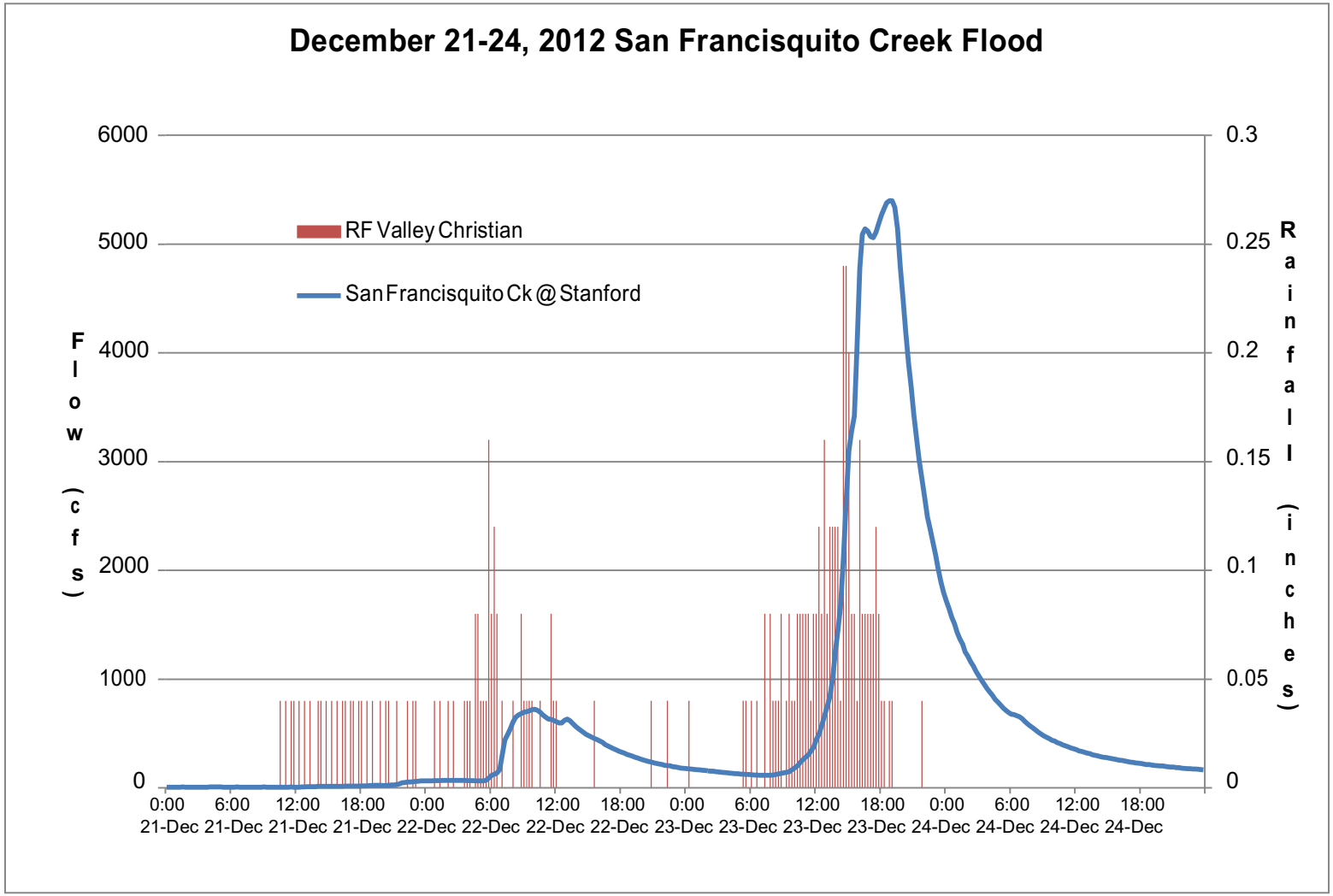

December 21-24, 2012 San Francisquito Creek Flood
RF Valley Christian
San Francisquito Ck @ Stanford
Flow (cfs)
Rainfall (inches)
6000
5000
4000
3000
2000
1000
0
0.3
0.25
0.2
0.15
0.1
0.05
0
0:00 6:00 12:00 18:00 0:00 6:00 12:00 18:00 0:00 6:00 12:00 18:00 0:00 6:00 12:00 18:00
21-Dec 21-Dec 21-Dec 21-Dec 22-Dec 22-Dec 22-Dec 22-Dec 23-Dec 23-Dec 23-Dec 23-Dec 24-Dec 24-Dec 24-Dec 24-Dec

FIGURE 2

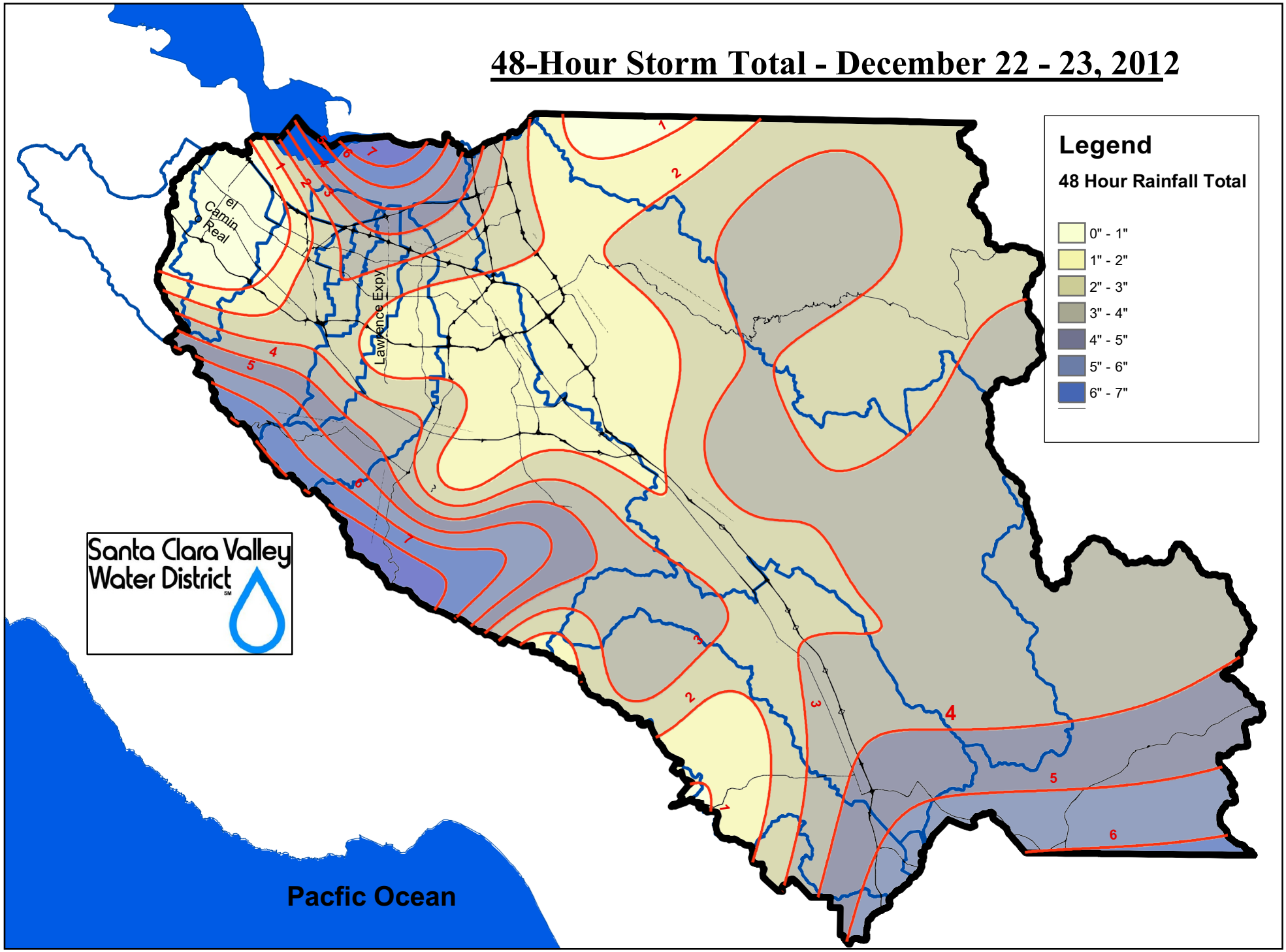
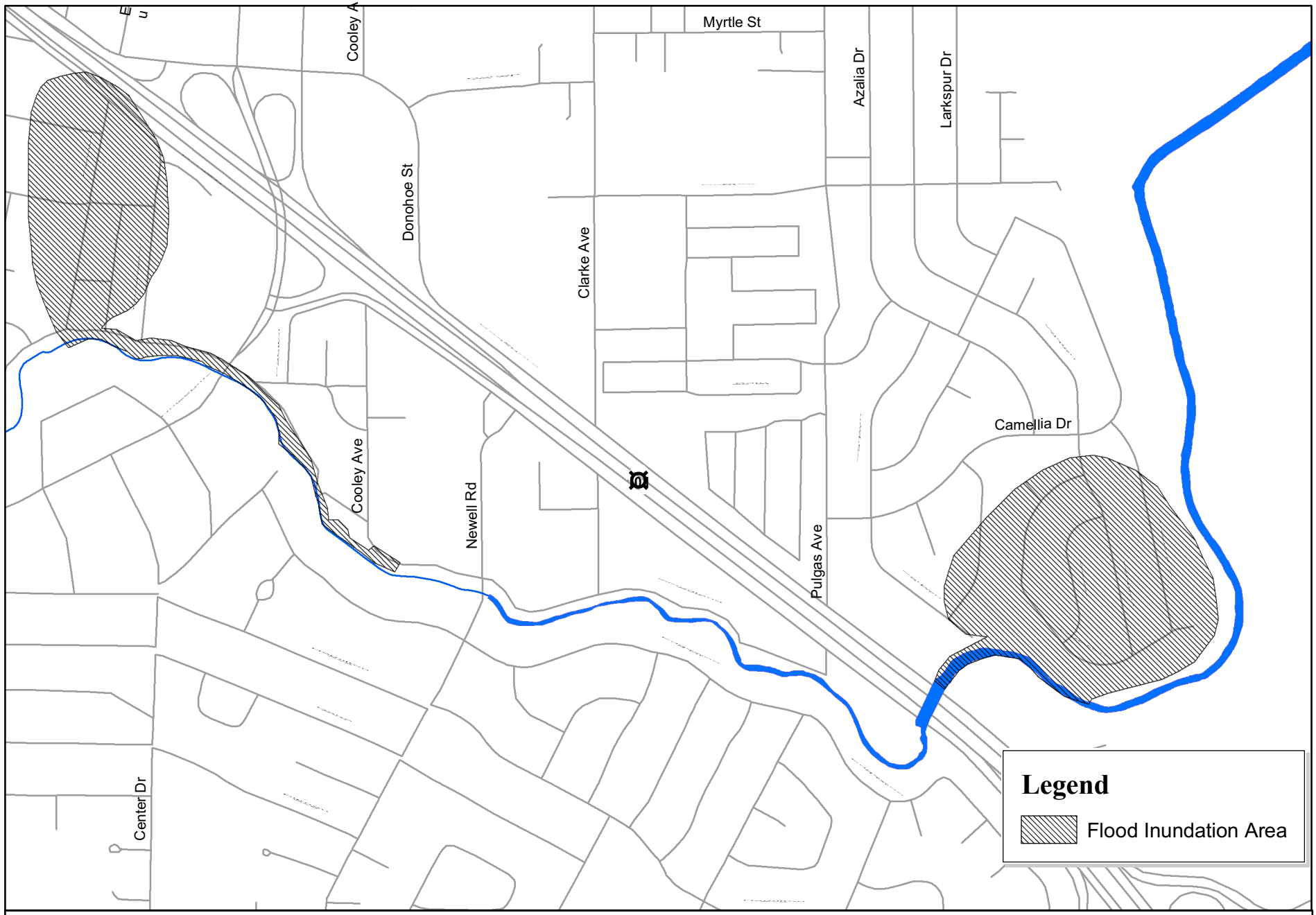

48-Hour Storm Total - December 22 - 23, 2012
Legend
48 Hour Rainfall Total
0" - 1"
1" - 2"
2" - 3"
3" - 4"
4" - 5"
5" - 6"
6" - 7"
El Camino Real
Lawrence Expy
Santa Clara Valley Water District
Pacfic Ocean

FIGURE 3



San Francisquito Creek Flood Inundation Area
December 23rd, 2012

APPENDIX A

SAN FRANCISQUITO CREEK EVENT INSPECTION 12/27/2012

San Francisquito Creek
Event Inspection 12/27/2012
10+00
20+00
30+00
40+00
50+00
SAN FRANCISQUITO CREEK
560 - Typical Levee
561 - Rodent Holes
562 - standing water
563 - Rodent Holes and Standing Water
564 - standing water
565 - woody growth - no visual of levee
566 - standing water
567 - minor void / seepage through lift
568 - woody growth on levee - no visual inspection
569 - rodent hole at lift , seepage?
570, 571 - standing water
572 - hole - seepage at lift
573 - Hole - seepage at lift
574 - Hole - seepage at lift
576, 577 - boil berms
0
480
960
1,920
Feet
Approximate Scale
Santa Clara Valley
Water District

San Francisquito Creek
Event Inspection 12/27/2012
visual of levee
566 - standing water
567 - minor void / seepage through lift
40+00
568 - woody growth on levee - no visual inspec
569 - rodent hole at lift , seepage?
570, 571 - standing water
572 - hole - seepage at lift
50+00
573 - Hole - seepage at lift
574 - Hole - seepage at lift
575 - boil berms
576, 577 - boil berms
580 - new sloughing opposite bank
581 - new sloughing opposite bank
60+00
578, 579 new sloughing inboard
584, 585, 586, 588, 591
Sediment Build-up
PA
594 - Sediment under Bayshore Rd
581 - Standing water near post office
583 - minor rilling at school inboard
Geng Rd
W Bayshore Rd
Edgewood Dr
E Bayshore Rd
Wildwood Ln
Ivy Ln
480
960
920
Feet
Approximate Scale
Santa Clara Valley
Water District

SCVWD Creek Inspection Sheet

Date Inspected: 12/27/2012

Inspectors: Ray Bramer / Rebecca Wolff

Creek Name: **San Francisquito**

Maximo Reach #:

W.O.#:

Facility Type	Category	Photo #	Dir. of Photo	D/S Station	U/S Station	Position (facing U/S) & Condition Code			Fee, Esmt, None	Qty (Unit)	Nearest Cross Street	Description
						Left	Middle	Right				
LEV	TYP	560	US	6+50		x			Esmt		D/S Geng Rd	Typical looking U/S from Bay
LEV	GSC	561	AT	17+75		x			Esmt		D/S Geng Rd	Ground squirrel hole, typical in reach
LEV	MSC	562	AT	20+00		x			Esmt, None		D/S Geng Rd	Standing Water Outboard Levee from City Golf Course Drainage
LEV	GSC	563	AT	23+00		x			Esmt, None		D/S Geng Rd	Ground squirrel hole and standing water - adjacent
LEV	MSC	564	AT	26+50		x			Esmt, None		D/S Geng Rd	Standing Water Outboard Levee from City Golf Course Drainage
LEV	VGW	565	US	34+00		x			Esmt		D/S Geng Rd	Woody Veg and grassy slopes make inspection difficult
LEV	MSC	566	AT	38+00		x			Esmt		D/S Geng Rd	Standing Water Outboard Levee from City Golf Course Drainage
LEV	MSC	567	AT	39+00		x			Esmt		D/S Geng Rd	See minor void? Seepage through lift (capitol) see orange ribbon
LEV	VGW	568	US	41+25		x			Esmt		D/S Geng Rd	Woody Growth on outboard Levee, no visual inspection
LEV	MSC	569	AT	43+00		x			Esmt		D/S Geng Rd	Rodent hole at lift - seepage??
LEV	MSC	570	US	47+25		x			Esmt		D/S Geng Rd	Standing Water Outboard Levee from City Golf Course Drainage
LEV	MSC	571	AT	47+25		x			Esmt		D/S Geng Rd	Standing Water Outboard Levee from City Golf Course Drainage
LEV	MSC	572	AT	47+75		x			Esmt		D/S Geng Rd	Hole seepage at lift- inboard
LEV	MSC	573	AT	51+35		x			Esmt		D/S Geng Rd	Hole seepage at lift - outboard
LEV	MSC	574	AT	51+35		x			Esmt		D/S Geng Rd	Hole seepage at lift- inboard
LEV	MSC	575	US	56+00		x			Esmt		D/S Geng Rd	Boil berms d/s Geng Road installed 12/24/2012
LEV	MSC	576	US	55+70		x			Esmt		D/S Geng Rd	Boil berms d/s Geng Road installed 12/24/2012
LEV	MSC	577	DS	55+70		x			Esmt		D/S Geng Rd	Boil berms d/s Geng Road installed 12/24/2012
LEV	ERO	578	DS	57+75		x			Esmt		D/S Geng Rd	New sloughing inboard- see old inspection?
LEV	ERO	579	DS	57+75		x			Esmt		D/S Geng Rd	New sloughing inboard- see old inspection?
LEV	ERO	580	US	63+25				x	None		U/S Geng Rd	New Sloughing opposite bank

* Key on back side of sheet

Esmt, None = portions of the inspected area are located within SCVWD easement and others are located outside SCVWD Jurisdiction (i.e. SCVWD has no fee title or easement in that area)

SCVWD Creek Inspection Sh

Date Inspected: 12/27/2012

Inspectors: Ray Bramer / Rebecca Wolff

Creek Name: **San Francisquito**

Maximo Reach #:

W.O.#:

Facility Type	Category	Photo #	Dir. of Photo	D/S Station	U/S Station	Position (facing U/S) & Condition Code			Fee, Esmt, None	Qty (Unit)	Nearest Cross Street	Description
						Left	Middle	Right				
LEV	MSC	581	AT	66+75		x			Fee, Esmt		U/S Geng Rd	Standing Water near post office , drainage?
LEV	ERO	582	US	68+50				x	Fee, None		U/S Geng Rd	New Sloughing opposite bank
LEV	ERO	583	DS	70+25		x			Fee		D/S Bayshore	Minor Rilling inboard levee at school
ECH	SED	584	DS	76+75	78+70	x			Esmt, None		D/S Bayshore	Sediment Buildup D/S Bayshore
ECH	SED	585	AT	76+75	78+70	x			Esmt, None		D/S Bayshore	Sediment Buildup D/S Bayshore
ECH	SED	586	AT	76+75	78+70	x			Esmt, None		D/S Bayshore	Sediment Buildup D/S Bayshore
ECH	SED	588	DS	76+75	78+70	x			Esmt, None		D/S Bayshore	Sediment Buildup D/S Bayshore
ECH	SED	591	DS	76+75	78+70	x			Esmt, None		D/S Bayshore	Sediment Buildup D/S Bayshore
ECH	SED	594	AT	79+05		x			None		D/S Bayshore	Sediment Buildup under Bayshore

* Key on back side of sheet

Esmt, None = portions of the inspected area are located within SCVWD easement and others are located outside SCVWD Jurisdiction (i.e. SCVWD has no fee title or easement in that area)

Typical levee
(SCVWD 560) - 12/27/2012

Rodent hole
(SCVWD 561) – 12/27/2012

Standing water
(SCVWD 562) – 12/27/2012

Rodent hole (Foreground) Standing water (Background)
(SCVWD 563) – 12/27/2012

Standing water
(SCVWD 564) – 12/27/2012

Woody growth – "no visual of levee"
(SCVWD 565) – 12/27/2012

Standing water
(SCVWD 566) – 12/27/2012

Minor void / seepage through lift
(SCVWD 567) – 12/27/2012

Woody growth on levee – no visual inspection
(SCVWD 568) – 12/27/2012

Rodent hole at lift – noted "seepage?"
(SCVWD 569) – 12/27/2012

Standing water
(SCVWD 570) – 12/27/2012

Standing Water
(SCVWD 571) – 12/27/2012

Hole with seepage at lift
(SCVWD 572) – 12/27/2012

Hole with seepage at lift
(SCVWD 573) – 12/27/2012

Hole with seepage at lift
(SCVWD 574) – 12/27/2012

Boil Berms
(SCVWD 575) – 12/27/2012

Boil Berm
(SCVWD 576) – 12/27/2012

Boil Berms
(SCVWD 577) – 12/27/2012

New sloughing inboard
(SCVWD 578) – 12/27/2012

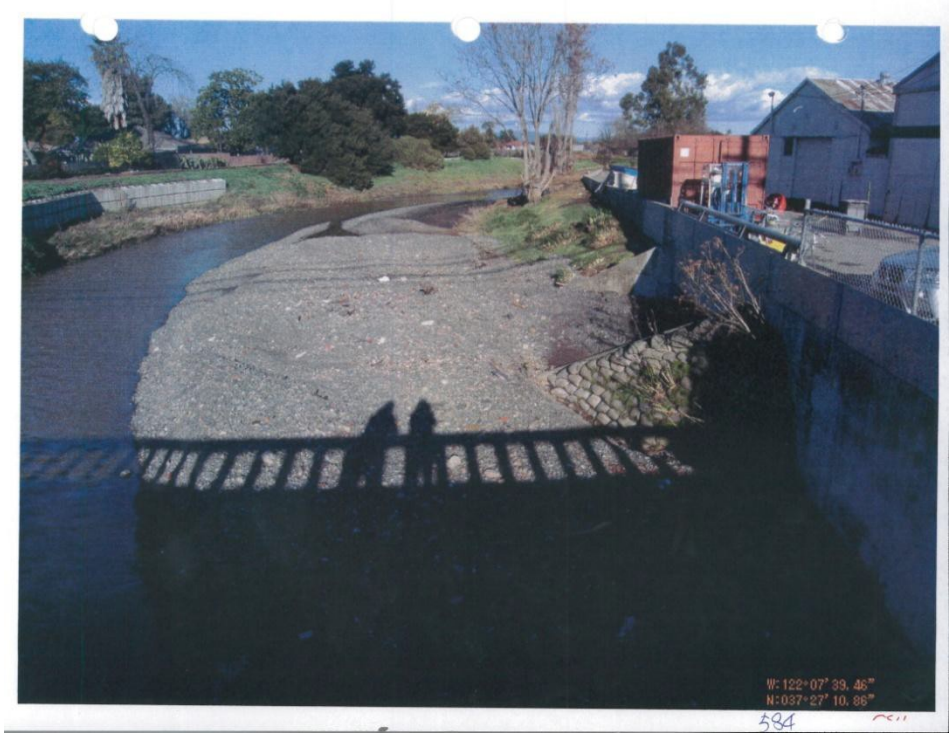
New sloughing inboard
(SCVWD 579) – 12/27/2012

New sloughing on opposite bank
(SCVWD 580) – 12/27/2012

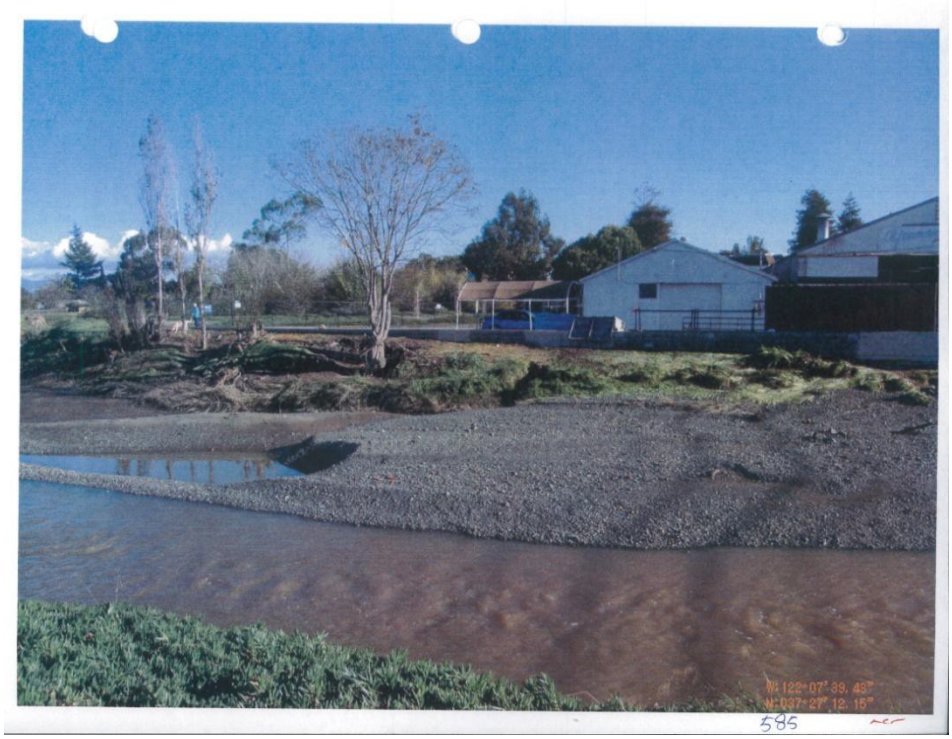
Standing water located near East Palo Alto Post Office
(SCVWD 581) – 12/27/2012

New sloughing located on the opposite bank
(SCVWD 582) – 12/27/2012

Minor rilling at the International School of the Peninsula inboard
(SCVWD 583) – 12/27/2012

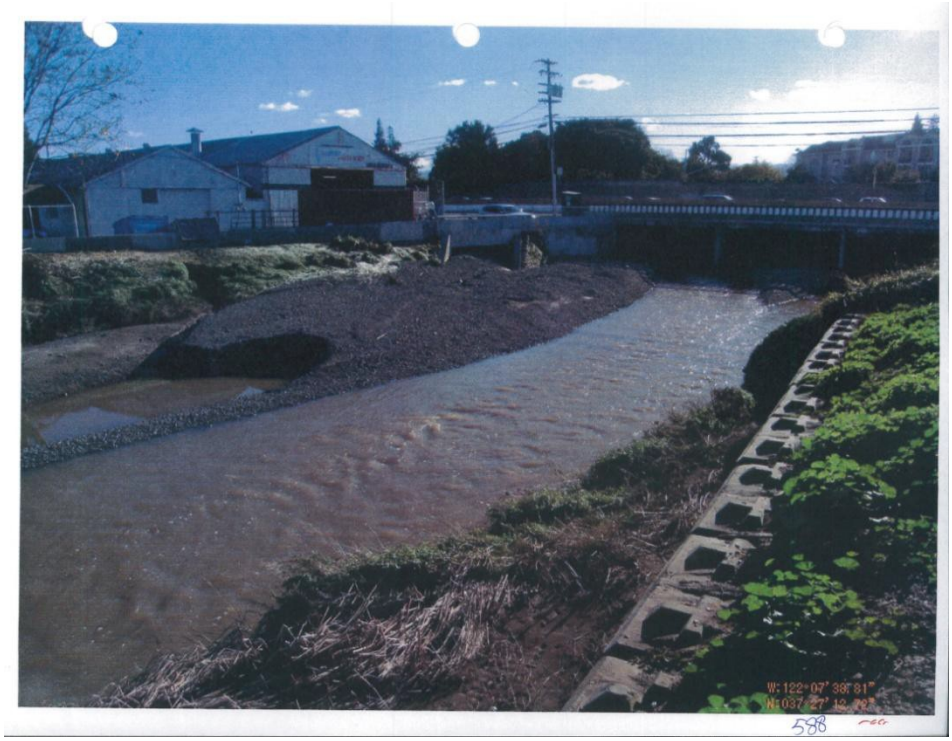


Sediment downstream of Bayshore Road
(SCVWD 584) -12/27/2012

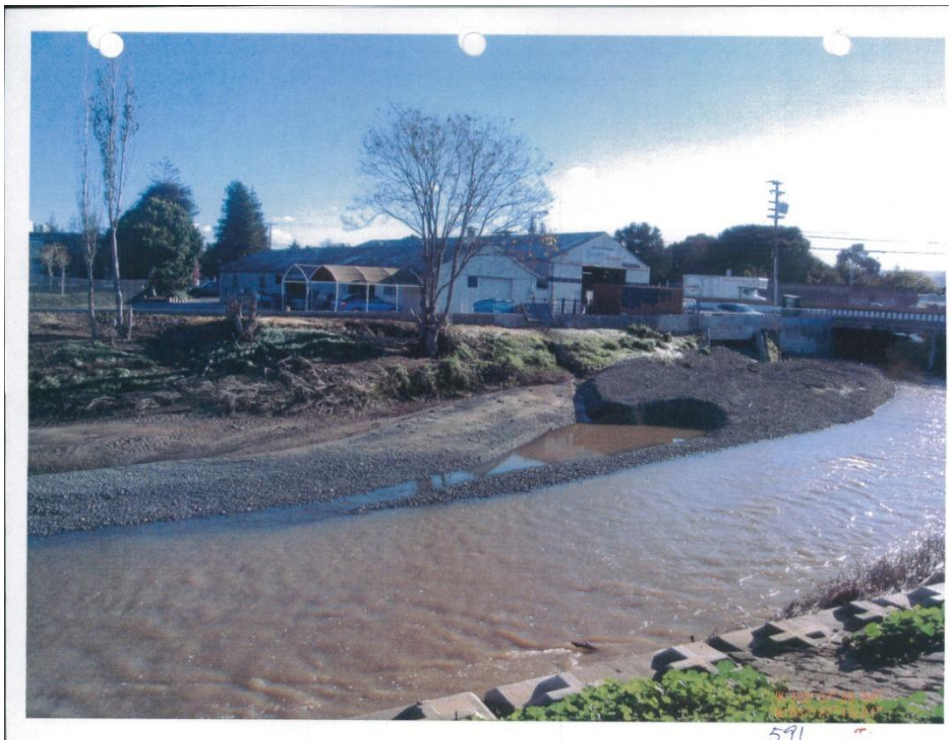


Sediment buildup downstream of Bayshore Road
(SCVWD 585) – 12/27/2012

Sediment buildup downstream of Bayshore Road
(SCVWD 586) – 12/27/2012



Sediment buildup downstream of Bayshore Road
(SCVWD 588) – 12/27/2012



Sediment buildup downstream of Bayshore Road
(SCVWD 591) – 12/27/2012

Sediment under (upstream) of Bayshore Road
(SCVWD 594) – 12/27/2012

APPENDIX B

SAN FRANCISQUITO CREEK EVENT INSPECTION 12/31/2012

San Francisquito Creek
Bottleneck Inspections 12-31-2012
Minor Log Blockage
Ped Bridge
Down Tree in Channel
Fallen from E. PA Side
Cantilever House
Bridge Sharks
160+00
150+00
140+00
130+00
120+00
110+00
100+00
90+00
80+00
70+00
N
S
E
W
0
295
590
1,180
Feet
Legend
SCVWD Fee
SCVWD Easement
Santa Clara Valley
Water District
GIS themes are for illustration and general analysis purposes only and are not accurate to surveying or engineering standards. Information is not guaranteed to be accurate, current, or complete and use of this information is your responsibility.

SCVWD Creek Inspecti Sheet

Date Inspected: 12/31/2012

Inspectors: Ray Bramer / Rebecca Wolff

Creek Name: **San Francisquito**

Maximo Reach #:

W.O.#:

Facility Type	Category	Photo #	Dir. of Photo	D/S Station	U/S Station	Position (facing U/S) & Condition Code			Fee, Esmt, None	Qty (Unit)	Nearest Cross Street	Description
						Left	Middle	Right				
BN 1		604	AT	81+65					Esmt, None		U/S Bayshore	Bridge Shark
BN 1		605	US	86+25					Esmt, None		U/S Bayshore	Clear
BN 1		606	DS	86+25					Esmt, None		U/S Bayshore	Clear
BN 1		607	DS	94+25					Esmt, None		U/S Bayshore	Clear
BN 1		608	DS	93+50					Esmt, None		U/S Bayshore	LWD - OK
BN 2		609	DS	101+50					Esmt, None		D/S Newell	Clear
BN 2		610	US	101+50					Esmt, None		D/S Newell	Clear
BN 2		611	AT	101+50					Esmt, None		D/S Newell	Willows on Rip Rap
BN 2		612	DS	105+50					Esmt, None		D/S Newell	Willows on Rip Rap
BN 2		613	US	105+50					Esmt, None		D/S Newell	Willows on Rip Rap
BN 2		614	US	105+50					Esmt, None		D/S Newell	Channel Clear
BN 2		615	DS	109+00					Esmt, None		D/S Newell	Tree down E. PA side
BN 2		616	US	109+00					Esmt, None		D/S Newell	Clear
BN 3		617	DS	114+00					Esmt, None		D/S Newell	Channel Clear
BN 3		618	DS	113+50					Esmt, None		D/S Newell	LWD E. PA side bank
BN 3		619	US	114+50					Esmt, None		U/S Newell	Down Tree E. PA side - Joe Teresi sent picture
BN 3		620	US	114+50					Esmt, None		U/S Newell	Clear
BN 3		621	DS	119+50					Esmt, None		U/S Newell	Channel narrow due to sed and veg - E. PA side

* Key on back side of sheet

Esmt, None = portions of the inspected area are located within SCVWD easement and others are located outside SCVWD Jurisdiction (i.e. SCVWD has no fee title or easement in that area)

SCVWD Creek Inspection Sheet

Date Inspected: 12/31/2012

Inspectors: Ray Bramer / Rebecca Wolff

Creek Name: **San Francisquito**

Maximo Reach #:

W.O.#:

Facility Type	Category	Photo #	Dir. of Photo	D/S Station	U/S Station	Position (facing U/S) & Condition Code			Fee, Esmt, None	Qty (Unit)	Nearest Cross Street	Description
						Left	Middle	Right				
BN 4		622	US	120+00					Esmt, None		U/S Newell	Clear
BN 4		623	AT	120+00					Esmt, None		U/S Newell	Rafting Kids
BN 4		624	US	122+00					Esmt, None		U/S Newell	Clear
BN 4		625	DS	125+50					Esmt, None		U/S Newell	See willows in channel
BN 4		626	US	125+50					Esmt, None		U/S Newell	Clear
BN 4		627	US	127+25					Fee, None		U/S Newell	Down tree in channel from E. PA Side engulfing channel
BN 4		628	DS	128+00					Fee, None		U/S Newell	Down tree in channel from E. PA Side engulfing channel
BN 5		629	DS	139+50					Esmt, None		U/S University	Clear
BN 5		630	DS	143+25					Esmt, None		U/S University	Clear
BN 5		631	US	143+00					Esmt, None		U/S University	Minor blockage across from 1523 Woodland
BN 5		632	US	144+00					Esmt, None		U/S University	Clear
BN 6		633	DS	155+50					Fee, Ease, None		U/S University	Clear D/S from cantilever House
BN 6		634	US	155+50					Ease, None		U/S University	Clear U/S from cantilever House
BN 6		635	US	149+50					Ease, None		U/S University	Clear under ped bridge
BN 6		636	DS	149+50					Ease, None		U/S University	Clear
BN 6		637	US	150+00					Ease, None		U/S University	Clear From Ped Bridge looking U/S

* Key on back side of sheet

Esmt, None = portions of the inspected area are located within SCVWD easement and others are located outside SCVWD Jurisdiction (i.e. SCVWD has no fee title or easement in that area)

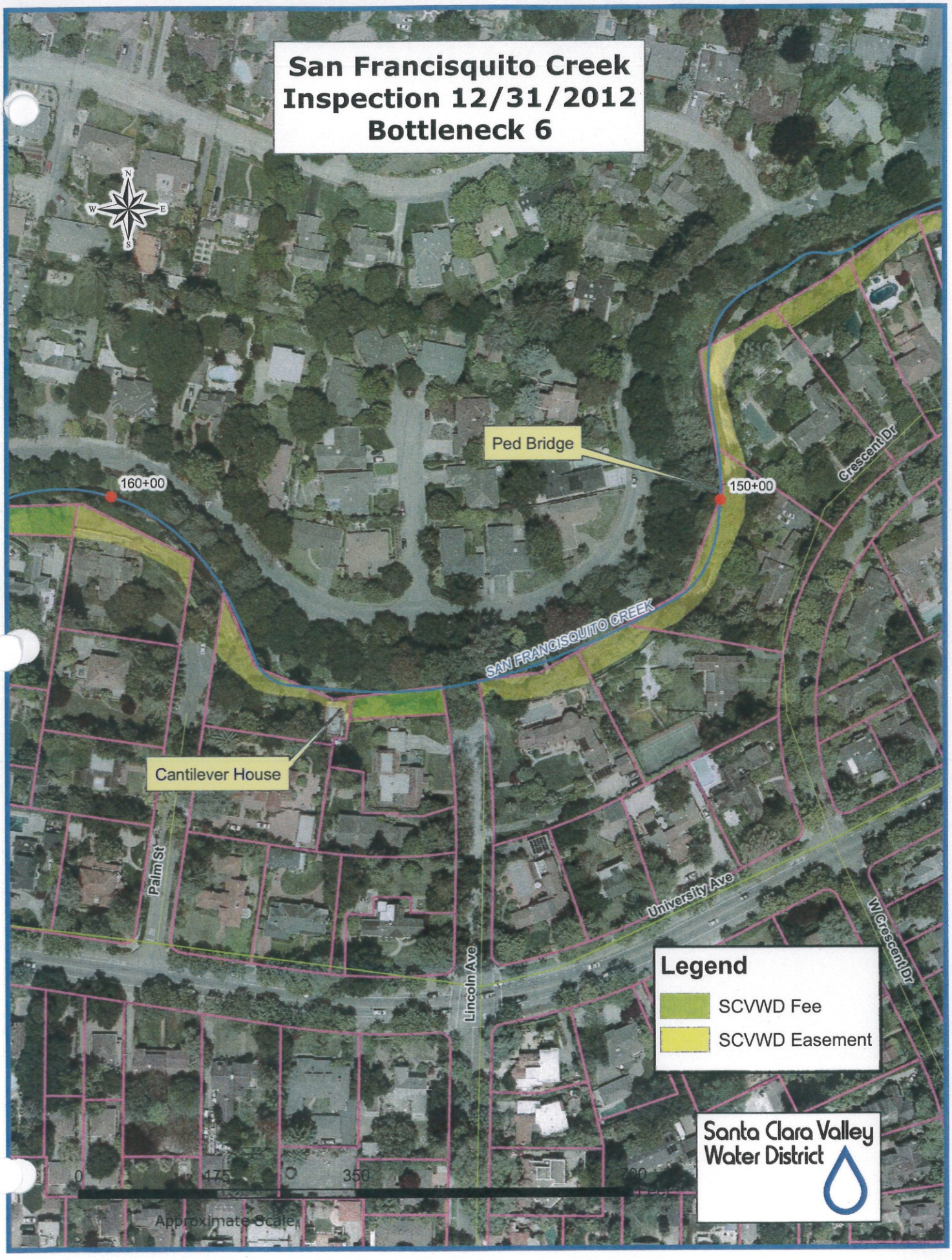
San Francisquito Creek
Inspection 12/31/2012
Bottleneck 1
N
W
E
S
SAN FRANCISQUITO CREEK
90+00
80+00
Bridge Sharks
E Bayshore Rd
US 101
US 101
W Bayshore Rd
Rhodes Dr
Edgewood Dr
Hilbar Ln
Alannah Ct
Greer Rd
Hilbar Ln
Legend
SCVWD Fee
SCVWD Easement
Santa Clara Valley
Water District
190
380
760
Feet
Approximate Scale

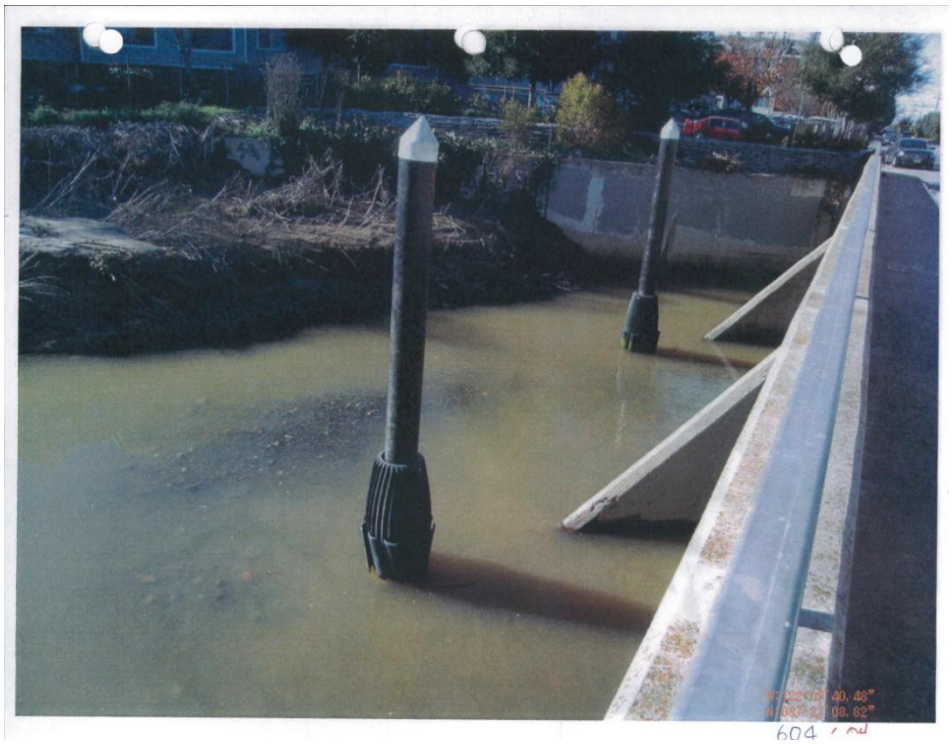
San Francisquito Creek
Inspection 12/31/2012
Bottleneck 2
N
W
E
S
SAN FRANCISQUITO CREEK
110+00
100+00
Edgewood Dr
Phillips Rd
Madison Way
Hamilton Ave
Jefferson Dr
Jackson Dr
Legend
SCVWD Fee
SCVWD Easement
Santa Clara Valley
Water District
190
380
Approximate Scale

San Francisquito Creek
Inspection 12/31/2012
Bottleneck 3
N
W
E
S
SAN FRANCISQUITO CREEK
120+00
110+
Hamilton Ave
Newell Rd
Dana Ave
Phillips R
Legend
SCVWD Fee
SCVWD Easement
0
190
380
760
Feet
Approximate Scale
Santa Clara Valley
Water District

San Francisquito Creek
Inspection 12/31/2012
Bottleneck 4
University Ave
N
W
E
S
130+00
Down Tree in Channel
Fallen from E. PA Side
E Crescent Dr
Southwood Dr
Edgewood Dr
SAN FRANCISQUITO CREEK
120+00
Island Dr
Hamilton Ave
Legend
SCVWD Fee
SCVWD Easement
Santa Clara Valley
Water District
0
190
380
760
Feet
Approximate Scale

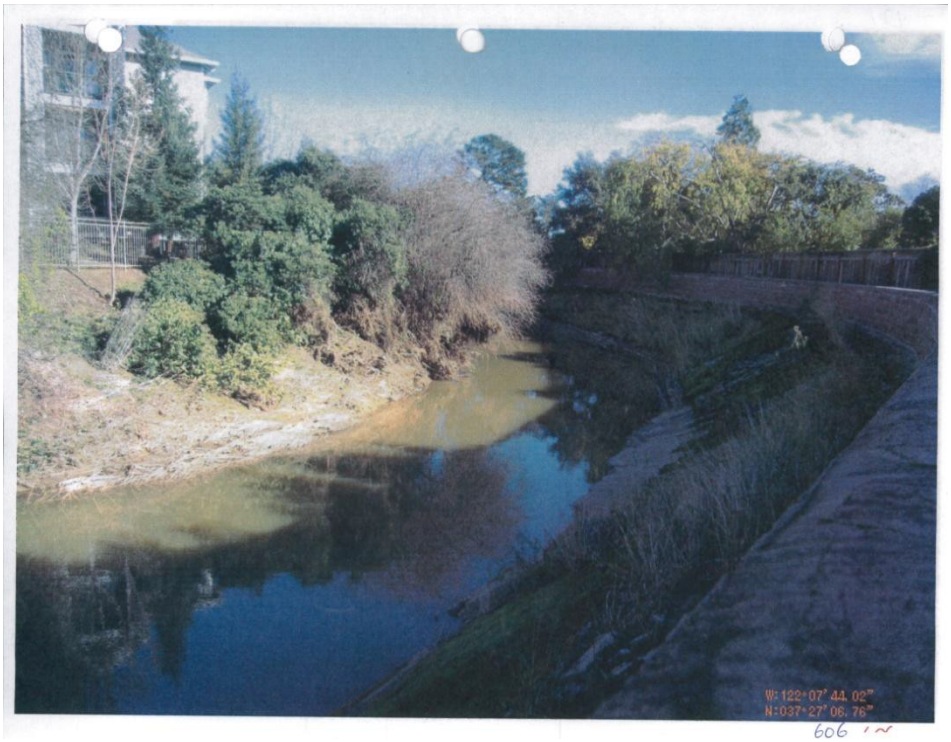
San Francisquito Creek
Inspection 12/31/2012
Bottleneck 5
N
W
E
S
Minor Log Blockage
SAN FRANCISQUITO CREEK
140+00
Crescent Dr
150+00
Legend
SCVWD Fee
SCVWD Easement
University Ave
Center Dr
W Crescent Dr
0
190
380
760
Feet
Approximate Scale
Santa Clara Valley
Water District


San Francisquito Creek
Inspection 12/31/2012
Bottleneck 6
N
W
E
S
Ped Bridge
160+00
150+00
Crescent Dr
SAN FRANCISQUITO CREEK
Cantilever House
Palm St
University Ave
Lincoln Ave
W Crescent Dr
Legend
SCVWD Fee
SCVWD Easement
Santa Clara Valley
Water District
0
175
350
700
Approximate Scale



Bridge Shark
(SCVWD 604) – 12/31/2012

Clear creek
(SCVWD 605) – 12/31/2012



Clear channel
(SCVWD 606) – 12/31/2012

Clear channel
(SCVWD 607) – 12/31/2012

(SCVWD 608) – 12/31/2012

(SCVWD 609) – 12/31/2012

(SCVWD 610) – 12/31/2012

Willows on Rip Rap
(SCVWD 611) – 12/31/2012

Willows on Rip Rap
(SCVWD 612) – 12/31/2012

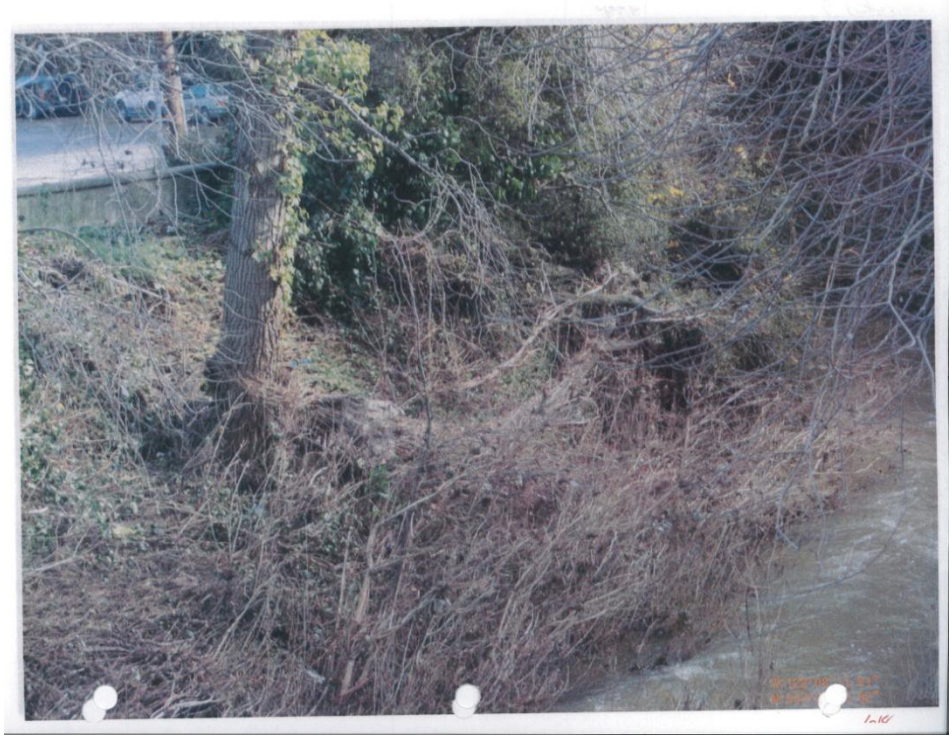
Willows on Rip Rap
(SCVWD 613) – 12/31/2012

(SCVWD 614) – 12/31/2012

Tree down East Palo Alto side
(SCVWD 615) – 12/31/2012

(SCVWD 616) – 12/31/2012

(SCVWD 617) – 12/31/2012



"LWD" East Palo Alto side
(SCVWD 618) – 12/31/2012

Down tree East Palo Alto side – Joe Teresi sent picture
(SCVWD 619) – 12/31/2012

(SCVWD 620) – 12/31/2012

Narrowed channel due to sediment and vegetation
(SCVWD 621) – 12/31/2012

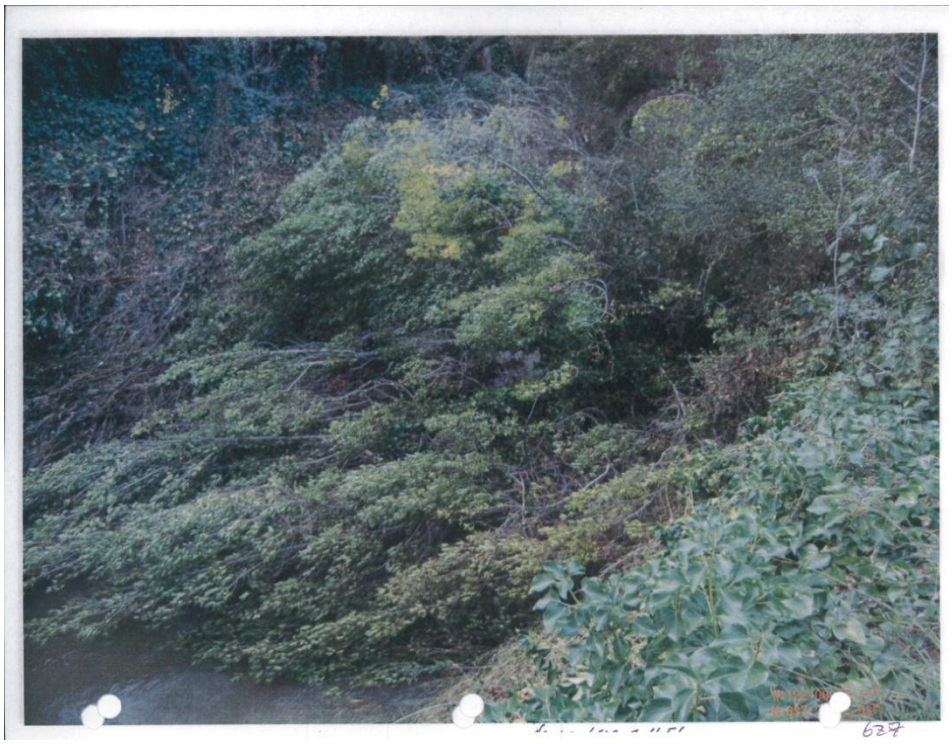
(SCVWD 622) – 12/31/2012

"Rafting kids"
(SCVWD 623) – 12/31/2012

(SCVWD 624) – 12/31/2012

Willows in channel
(SCVWD 625) – 12/31/2012

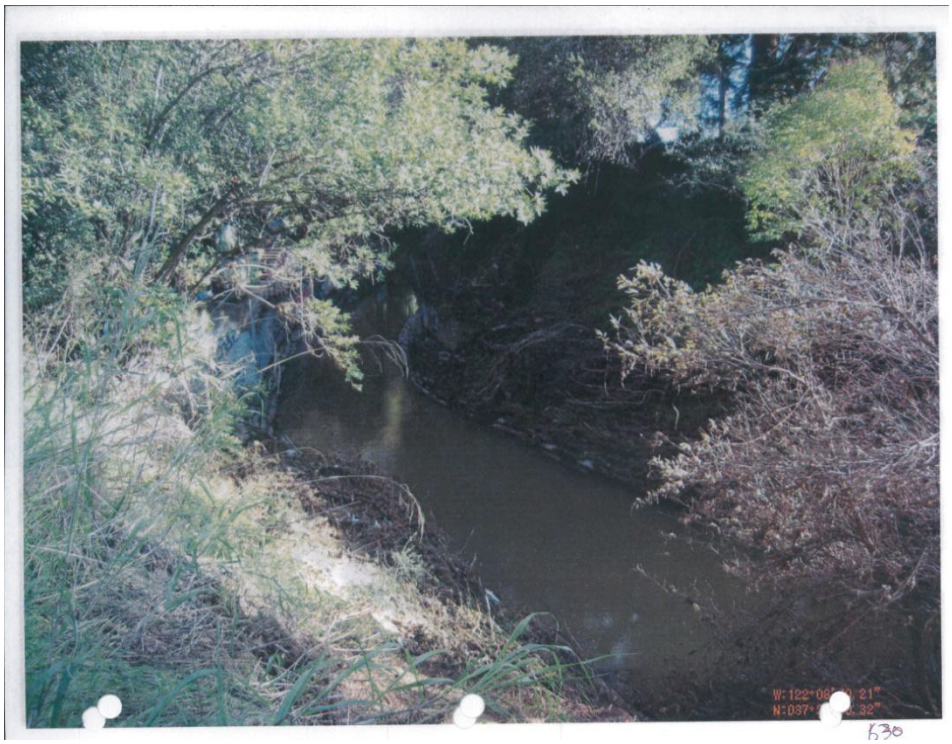
(SCVWD 626) – 12/31/2012



Downed tree in channel from East Palo Alto side engulfing channel
(SCVWD 627) – 12/31/2012

Down tree in channel from East Palo Alto side engulfing channel
(SCVWD 628) – 12/31/2012

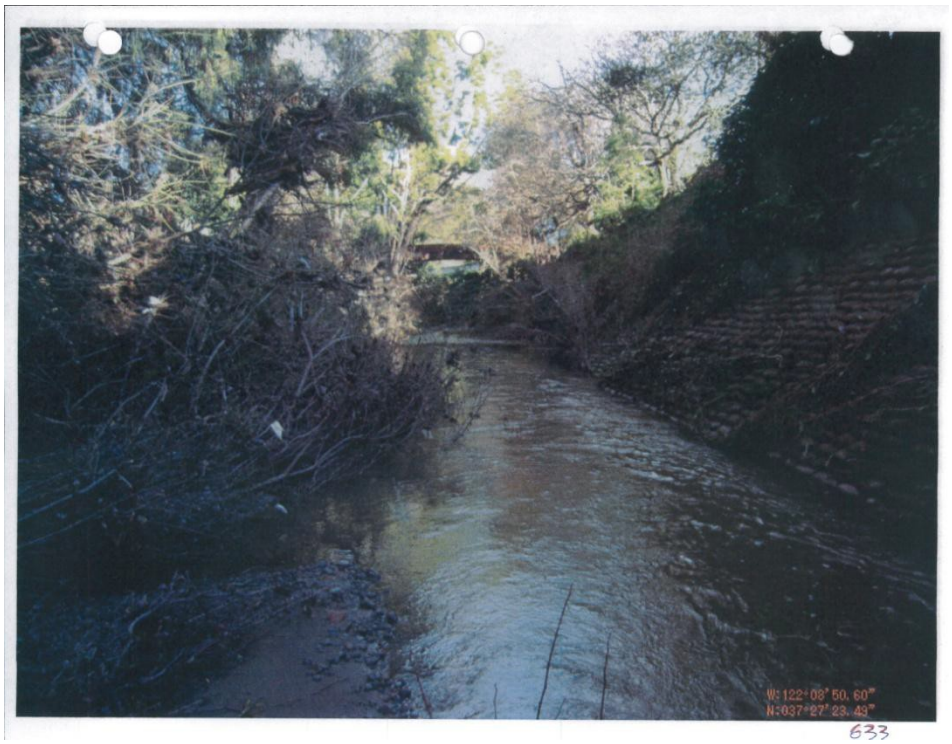
(SCVWD 629) – 12/31/2012



(SCVWD 630) – 12/31/2012

Minor blockage across from 1523 Woodland Avenue
(SCVWD 631) – 12/31/2012

(SCVWD 632) – 12/31/2012



(SCVWD 633) – 12/31/2012

Cantilever house on Lincoln Avenue
(SCVWD 634) – 12/31/2012

Pedestrian bridge
(SCVWD 635) – 12/31/2012

(SCVWD 636) – 12/31/2012

(SCVWD 637) – 12/31/2012

APPENDIX C

State of California

Proclamation of a State of Emergency

Executive Department
State of California

PROCLAMATION OF A STATE OF EMERGENCY

WHEREAS on December 23, 2012, a severe rainstorm brought excessive precipitation to Northern California; and

WHEREAS this severe storm caused extreme peril to the transportation infrastructure and the safety of people and property within the county of San Mateo; and

WHEREAS the effects of the storm caused severe damage to, and closure of, state highways and local roadways in the county of San Mateo; and

WHEREAS the effects of the storm continue to threaten the county of San Mateo; and

WHEREAS the county of San Mateo has declared a local emergency and requested that I declare a state of emergency; and

WHEREAS the circumstances of the storm damage, by reason of their magnitude, are or are likely to be beyond the control of the services, personnel, equipment and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat; and

WHEREAS under the provisions of section 8558(b) of the California Government Code, I find that conditions of extreme peril to the safety of persons and property exist due to the storm damage in the county of San Mateo.

NOW, THEREFORE, I, EDMUND G. BROWN JR., Governor of the State of California, in accordance with the authority vested in me by the state Constitution and statutes, including the California Emergency Services Act, and in particular, section 8625 of the California Government Code, **HEREBY PROCLAIM A STATE OF EMERGENCY** to exist within the county of San Mateo.

IT IS HEREBY ORDERED THAT:

1. Caltrans shall formally request immediate assistance through the Federal Highway Administration's Emergency Relief Program, Title 23, United States Code section 125, in order to obtain federal assistance for highway repairs or reconstruction in the county of San Mateo.

2. All agencies of the state government utilize and employ state personnel, equipment and facilities for the performance of any and all activities related to this state of emergency consistent with the direction of the California Emergency Management Agency (Cal EMA) and the State Emergency Plan.

I FURTHER DIRECT that as soon as hereafter possible, this proclamation be filed in the Office of the Secretary of State and that widespread publicity and notice be given of this proclamation.

IN WITNESS WHEREOF I have hereunto set my hand and caused the Great Seal of the State of California to be affixed this 24th day of February 2013.

EDMUND G. BROWN, JR.
Governor of California

ATTEST:

DEBRA BOWEN
Secretary of State

APPENDIX D

City of Menlo Park

Initial Damage Estimate Worksheet

City of Menlo Park
Initial Damage Estimate Worksheet

Date(s): December 23 through 30, 2012

DECLARATIONS	a. Date Requested	b. Date Granted
Local: (San Mateo County)	12/23/2012	12/23/2012
Gubernatorial:	n/a	n/a
Director's Concurrence:	n/a	n/a
SBA:	n/a	n/a
Presidential:	n/a	n/a

IA Damage	A Destroyed	B Major Damage	C Minor Damage	D Area Affected	E Estimated Loss
13. Homes:	0	0	5-6	1.1 acres	$35,000 to $70,000
14. Mobiles:	0	0	0	n/a	n/a
15. Business:	0	0	5-10	3-5 acres	$250,000 to $750,000
16. Other: Creek Banks-private	0	11	0	2700 LF	$1,950,000 to $3,700,000
Creek Banks-public	0	0	3	175 LF	$193,000 to $370,000
17. Totals:	0	11	13 - 19	4-6 acres and 2900 LF	$2.4 million to $.4.9 million

PA Category Damage (Do not include normal operating costs)	Number of Sites	Estimated Costs
18 .CAT A: Debris Clearance:	1 (Creek Debris)	$100,000
19. CAT B: Emergency Protective Measures:	0	
20. CAT C: Road System Repairs:	0	
21. CAT D: Water Control Facilities:	0	
22. CAT E: Buildings & Equipment:	0	
23. CAT F: Public Utility Systems:	0	

City of Menlo Park
Initial Damage Estimate Worksheet

24. CAT 0: Other (Not in above Categories):	Mutual Aid to East Palo Alto	$6,338.00
25. Total:		$106,338

Federal Program Damage	**Estimated Cost**
26. Federal Highways (Title 23 Program): (For damages to federal highway systems)	n/a
27. U.S. Army Corps of Engineers (PL 99): (For emergency flood control projects)	n/a
28. Soil Conservation Service: (For emergency watershed rehabilitation)	n/a
29. Other (Describe):	n/a
30. Total:	n/a

Cost associated with protecting public infrastructure: Description: Did imminent danger exist before work was done? N/A

1) What is the potential impact/danger that existed before work began?
Potential risk of creek over-topping creek banks and water backing up in stormdrain system from creek, and bubbling out of inlets that are lower than creek water surface elevation elevation.
2) What potential impact to primary residences that existed?
See above.
3) Estimated expenses for construction/response?
N/A.

City of Menlo Park
Initial Damage Estimate Worksheet

Signature:	Date: 1/10/13
Name(print): Charles W. Taylor	Title: Public Works Director

December 23, 2012 Flood Damage Summary Details
City of Menlo Park, San Mateo County

<u>San Francisquito Creek:</u>

In the process of cleaning up and responding to concerns from some residents that live adjacent to San Francisquito Creek, Menlo Park staff conducted a field investigation and discovered damages along private property and public facilities initially not discovered during storm event. The following damages are listed below:

1. Within the City of Menlo Park jurisdiction the following damages occurred:
   - Creek Bank Erosion on Private Property: $1.95 to $3.7 million
   - Creek Bank Erosion on Public Property including Deposit of Debris within Local Creek: $193,00 to $370,000
   - Damage to Homes and Business: $285,000 to $820,000

   Descriptions of the damages for the various locations and photographs are attached as described below:

   Exhibit 1: Damages at locations 1-10
   Exhibit 2: Damages at Locations 11-13
   Exhibit 3: Damages at Locations 14-16

2. The City is seeking mutual aid for cleaning up the debris deposited in the creek. This cost is expected to be approximately $100,000. This work has not begun and will need to be completed prior to the next major storm event to prevent further flood damages.

3. The City of Menlo Park provided mutual aid to East Palo Alto for major flood damage clean-up work. The cost for this work was $6,338. See attached Exhibit 4 for details.

APPENDIX E

Flood Damage Sites at San Francisquito Creek

List of Projects

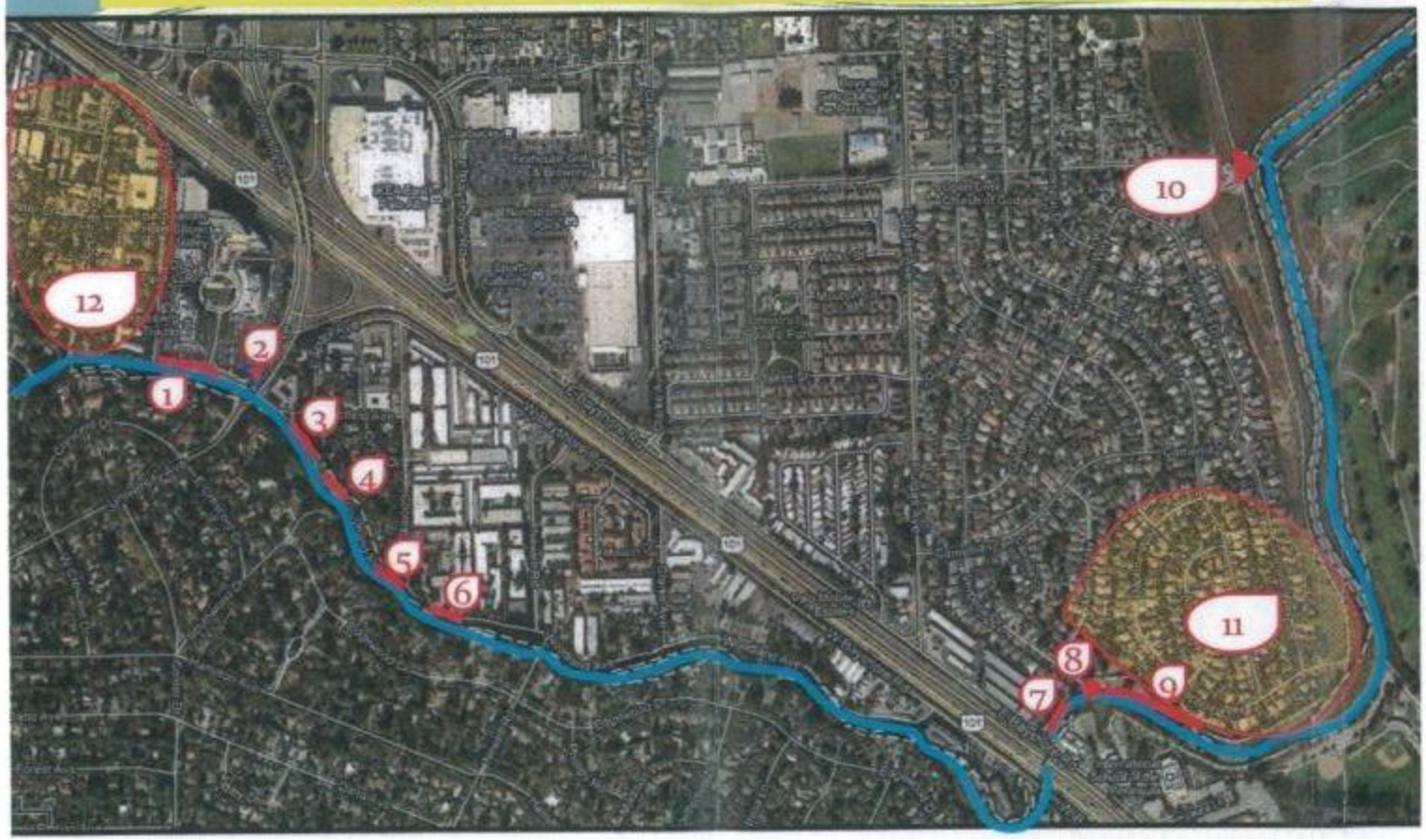
APPLICANT: CITY OF EAST PALO ALTO

DATE COMPLETED:_____

CONTACT NAME AND PHONE NUMBER: Kamal Fallaha (650) 853-3117

IS THIS AN AMENDED LIST OF PROJECTS? _____

ITEM #	LOCATION	DESCRIPTION OF DAMAGE AND SCOPE OF WORK	COST ESTIMATE	CATEGORY*	A) Debris Removal	B) Emergency Protective Measures	C) Roads and Bridges	D) Water Control Facilities	E) Buildings and Equipment	F) Utilities	G) Parks, Recreation Facilities and Other Items	WAS WORK COMPLETED BY FORCE ACCT (FA), CONTRACT (C) OR BOTH (F/C)?	ENTER "ENV" IF THERE ARE ENVIRONMENTAL ISSUES OR "HIST" FOR HISTORIC ISSUES, OR BOTH	WAS THERE INSURANCE COVERAGE? IF YES, ENTER DEDUCTIBLE AMOUNT	WAS THE FACILITY DAMAGED IN A PRIOR DISASTER(S)? IF YES, ENTER DISASTER NAME(S) OR NUMBER(S	ARE THERE COST EFFECTIVE HAZARD MITIGATION MEASURES THAT MAY PREVENT FUTURE DAMAGE?
1	San Francisquito Creek: Creekbank west of University/Woodland Avenue Intersection	Storms and high water caused slope failures to creekbank and cracks on side of road. Site requires a geotech investigation and 200 feet of pier supported edge beam.	$ 590,000				590,000					C		$		
2	University Avenue Bridge at San Francisquito Creek	Storm caused erosion at northeast abutment of bridge. The void requires a slurry fill to repair damage.	$ 30,000				30,000					C		$		
3	San Francisquito Creek: Creekbank 100 feet south of Intersection of Woodland Avenue and Scofield Street	Storms caused slope failures to creekbank. Site requires a geotech investigation, bank stabilization and erosion control measures.	$ 180,000				180,000					C		$		
4	San Francisquito Creek: Creekbank opposite to 1621 Woodland Avenue	Storms caused slope failures to creekbank. Site requires a geotech investigation, bank stabilization and erosion control measures.	$ 180,000				180,000					C		$		
5	San Francisquito Creek: Creekbank opposite to 1651Woodland Avenue	Storms caused slope failures to creekbank. Site requires a geotech investigation, bank stabilization, erosion control measures and 100 feet of pier supported edge beam.	$ 725,000				725,000					C		$		
6	San Francisquito Creek: Creekbank opposite to 1699 Woodland Avenue	Storms caused slope failures to creekbank. Site requires a geotech investigation, bank stabilization and erosion control measures.	$ 180,000				180,000					C		$	No	
7	San Francisquito Creek: Creekbank opposite to 1985 E Bayshore Blvd.	Storms caused levee damage including slope failure. The site requires a geotech investigation and installing 100' of Ultrablock to stabilize levee. Also repairs "boils".	$ 190,000					190,000				C		$	No	
8	Fallen Oak Tree at end of Verbena Av.	Storms caused to liquify thus causing the fall of a large Oak tree at the end of Verbena Ave.	$ 10,000		10,000									$	No	
9	Flooding of Houses/overtopping of levee, Placement of sandbags atop of the levee	Creek water overtopped the levee at the end of verbena. City Staff, State Crews help place over 3000 of sandbags where water overtopped the levee. Intermediate protective work to support levee.	$ 140,000			140,000								$	No	
10	Subsurface erosion at the O'Connor Pump Station concrete outfall structure has compromised the structural integrity of the structure	The water run-off from the creek caused subsurface erosion beneath the concrete outfall structure at the O'Connor Pump Station	$ 75,000			75,000								$	No	
11	Flooded Area 1, Clean up of the debris at the Garden Neighborhood area	Large amount of debris and mud washed into city streets in the Garden Neighborhood where most of the debris ended up in the City drainage system. The street have been cleaned and most of the surface debris have been removed. However, the City will assess the drainage system and remove all debris to prepare for the next storm	$ 50,000		50,000									$	No	
12	Flooded Area 1, Clean up of the debris at the University Circle//4 Seasons Hotel (Willow Neighborhood) area	Large amount of debris and mud washed into city streets in the Willow Neighborhood around University Circle/4 Seasons Hotel most of the debris ended up in the City drainage system. The street have been cleaned and most of the surface debris have been removed. However, the City will assess the drainage system and remove all debris to prepare for the next storm	$ 50,000		50,000									$	No	
13	Citywide	Geotechnical Investigation of various sites damaged by the storm to provide recommendation to the City to take necessary measures to protect life and property and to perform the necessary repairs. Cost of environmental consultant to obtain required permits	$ 90,000			90,000						C		$	No	
14	Citywide	Estimated force account labor, equipment, and supplies, and CA Conservation Corp, Redwood City, and Menlo Park assistance	$ 137,000			137,000								$		
	Totals		$ 2,627,000		$ 110,000	$ 442,000	$ 1,885,000	$ 190,000	$ -	$ -	$ -			$		

*CATEGORY: A) Debris Clearance; B) Protective Measures; C) Road System; D) Water Control Facility; E) Buildings and Equipment; F) Public Utility System; G) Other. (Note: if a single site has more than one category, indicate the category that represents the majority of damage.)

Flood Damage Sites at San Francisquito Creek